

*SKILL ACQUISITION IN THE IMPLEMENTATION OF  
FUNCTIONAL ANALYSIS METHODOLOGY*

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Functional analysis methodology is a powerful assessment tool for identifying contingencies that maintain a wide range of behavior disorders and for developing effective treatment programs. Nevertheless, concerns have been raised about the feasibility of conducting functional analyses in typical service settings. In this study, we examined the issue of skill acquisition in implementing functional analyses by evaluating an instructional program designed to establish a basic set of competencies. Eleven undergraduate students enrolled in a laboratory course in applied behavior analysis served as participants. Their performance was assessed during scripted simulations in which they played the roles of “therapists” who conducted functional analyses and trained graduate students played the roles of “clients” who emitted self-injurious and destructive behaviors. To approximate conditions under which an individual might conduct an assessment with limited prior training, participants read a brief set of materials prior to conducting baseline sessions. A multiple baseline design was used to assess the effects of training, which consisted of reading additional materials, watching a videotaped simulation demonstrating correct procedural implementation, passing a written quiz, and receiving feedback on performance during sessions. Results showed that participants scored a relatively high percentage of correct therapist responses during baseline, and that all achieved an accuracy level of 95% or higher following training that lasted about 2 hr. These results suggest that basic skills for conducting functional analyses can be acquired quickly by individuals who have relatively little clinical experience.

DESCRIPTORS: assessment, functional analysis, staff training

Assessment procedures that identify the functional characteristics of behavior are powerful tools for identifying sources of reinforcement that maintain behavior disorders and for developing subsequent treatment programs. In addition to having generated a great deal of interest in the research literature (e.g., see special issue of the *Journal of Applied Behavior Analysis*, Vol. 27, No. 2, 1994), these approaches to assessment have been mandated in recent court decisions and legislation on behalf of persons with developmental disabilities who have severe behav-

ior disorders (e.g., Individuals with Disabilities Education Act, 1975/1997). Thus, functional approaches to behavioral assessment have come to be regarded as best practice in both clinical research and application.

Many techniques have been subsumed under the general label *functional assessment*, including indirect methods such as interviews and questionnaires, descriptive analyses via direct observation, and systematic manipulations of environmental conditions (for reviews, see Iwata, Vollmer, & Zarcone, 1990; Mace, Lalli, & Lalli, 1991). The most precise methods for identifying behavioral function are derived from procedures that are commonly used in applied behavior analysis and are characterized by objective measures of ongoing behavior taken under multiple test and control conditions, in which

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antecedent and consequent events are clearly prescribed and are arranged in such a way as to identify functional relations between environment and behavior. These latter methods are commonly referred to as "experimental analysis" or "functional analysis" methodologies, and their utility has been demonstrated repeatedly over the past 15 years.

Nevertheless, concerns have been raised about the feasibility of conducting functional analyses in typical service settings. The most commonly cited limitations of functional analyses are the fact that they may be lengthy (Applegate, Matson, & Cherry, 1999; Durand & Crimmins, 1988; Pyles, Riordan, & Bailey, 1997; Sturmey, 1994) and that their implementation may require a considerable amount of training and clinical expertise (Crawford, Brockel, Schauss, & Miltenberger, 1992; Durand & Crimmins, 1988; Spreat & Connelly, 1996; Sturmey, 1994). Although conducting a functional analysis is a more lengthy process than is administering a questionnaire, it is not necessarily any more time consuming than is performing a descriptive analysis (Lerman & Iwata, 1993). Furthermore, recent research has yielded several ways for increasing the efficiency of functional analyses by conducting either fewer (Northup *et al.*, 1991) or briefer (Wallace & Iwata, 1999) sessions. By contrast, the issue of procedural complexity has not been addressed systematically. Thus, suggestions that "many staff members in positions to develop such programs lack the professional training to conduct such complex analyses" (Spreat & Connelly, 1996, p. 528) remain largely unanswered.

A logical basis for routinely teaching staff how to conduct functional analyses can be found through consideration of the skills needed to implement assessment and treatment programs. A functional analysis requires the ability to deliver a prescribed sequence of antecedent and consequent events

while interacting with a client, and it could be argued that staff who lack this skill would also be unable to implement most behavioral interventions with any degree of consistency. Logical arguments aside, little is known about the extent to which (or the speed with which) staff can acquire a basic set of skills for conducting functional analyses. Staff training has rarely been a topic of empirical investigation in research on the assessment and treatment of behavior disorders because a high degree of competence is usually a prerequisite for conducting a study. In other words, implementation errors in clinical research are typically minimized as unwanted sources of risk to both clients and staff as well as potential sources of experimental confounding and, as a result, have not been examined systematically as dependent variables (see Shore, Iwata, Vollmer, Lerman, & Zarcone, 1995, as an exception).

In this study, we evaluated the effects of a training program designed to establish basic competence in conducting functional analyses. Of particular interest were (a) the extent to which untrained individuals could implement a functional analysis with minimal instruction, and (b) the amount of training that was necessary to produce a high degree of technical accuracy.

## METHOD

### *Participants and Setting*

*Therapists.* Although staffing arrangements vary across settings, the entry-level individual responsible for conducting assessments, developing service plans, and implementing interventions is usually the teacher or the "qualified mental retardation professional" with a BA degree. Therefore, we selected as therapists upper-level undergraduate students who were representative of the types of staff who might be expected to conduct functional analyses. The participants were 11 students (10 women and 1 man)

who were enrolled in an applied behavior analysis laboratory course. All participants were junior or senior psychology majors who had one prior course in behavior analysis but no practicum experience in behavior analysis and no experience in the use of functional analysis methodology. The study was conducted at the beginning of the term, before participants had the opportunity to observe ongoing assessment (functional analysis) or treatment sessions. Although participants were required to complete this project as part of their course activities, their performance in the study did not count toward their course grades. All participants provided written informed consent for the use of their data as part of a research project.

*Clients.* In order to collect data on the performance of therapists who were relatively untrained, it was necessary to create a context for conducting functional analyses that did not place either therapists or actual clients who had severe behavior problems at risk. Therefore, 8 graduate students, all of whom had extensive experience conducting functional analyses, played the roles of clients throughout the study.

*Settings.* Training sessions for therapists were conducted either in a university classroom or in various therapy rooms of a day-treatment program located on the grounds of a state residential facility for persons with developmental disabilities, where most of the students' laboratory work was conducted. All functional analysis sessions were conducted at the day program.

#### *Functional Analysis Conditions*

The experimental task involved implementation of procedures that typically comprise a functional analysis. Three assessment conditions (attention, demand, and play) were selected as representative of those commonly used in functional analyses involving the manipulation of antecedent and consequent events associated with behavior dis-

orders (see Iwata, Dorsey, Slifer, Bauman, & Richman, 1982/1994). A fourth condition—alone—was deleted because it did not require the presence of a therapist. Correct implementation of the assessment conditions involved the delivery and removal of prescribed antecedent and consequent events by a therapist, as indicated below. (Note that condition descriptions depict ideal responses, which were not necessarily observed during baseline.)

During the attention condition, the client was given free access to several leisure items throughout the session. The therapist ignored the client throughout the session, except to deliver attention in the form of statements of concern (e.g., "Stop, don't do that; you'll hurt yourself") and brief physical contact (e.g., a pat on the back) following each occurrence of the target behavior. During the demand condition, the therapist presented learning trials to the client throughout the session, which were initiated at 30-s intervals using a three-prompt sequence (verbal instruction, instruction plus demonstration, instruction plus physical prompt). The therapist delivered praise if the client complied, continued the prompting sequence if the client did not comply, and terminated the trial (by removing the task materials and turning away from the client until the next trial) if the client exhibited a target behavior at any time during the trial. During the play condition, the client had free access to several leisure items throughout the session. The therapist delivered attention on a fixed-time (FT) 30-s schedule throughout the session, responded to any client-initiated appropriate social interactions, and ignored all occurrences of inappropriate behavior (target and nontarget). If the client was engaged in inappropriate behavior when the FT schedule called for the delivery of attention, attention was delayed until inappropriate behavior had ceased for 5 s.

### Assessment Simulations

We developed a series of scripts that specified the occurrence of various client behaviors during 5-min simulated assessment sessions representing each of the three conditions described above. The behaviors exhibited by clients included (a) self-injurious behavior (SIB), which was the target behavior during the functional analysis and consisted of striking an arm, leg, or part of the torso with the hand; (b) disruption, a non-target problem behavior, which consisted of kicking a wall; kicking, throwing, or knocking over furniture; or jumping up and down while screaming; (c) appropriate play, which consisted of either manipulation of leisure materials in a nondestructive manner or attempts to hand the materials to the therapist; (d) compliance with an instruction given by the therapist; and (e) appropriate initiation of social interaction, which consisted of asking the therapist to play or tugging on the therapist's sleeve. Fifteen scenarios were created, five each for the attention, demand, and play conditions. Each scenario contained the same number and distribution of client behaviors; however, both the sequence and temporal occurrence of these behaviors throughout a session were varied from one scenario to the next. For example, each scenario called for 15 occurrences of SIB, which occurred at different times across scenarios. A sample scenario for an attention session is provided in Table 1.

### Target Therapist Behaviors

The behaviors of primary interest were the performances of the undergraduate students, who played the roles of therapists while interacting with clients during the simulated functional analyses. The designated therapist behaviors consisted of (a) attention, defined as any social interaction, including reprimands, unrelated to a specific task; and (b) instruction, defined as a verbal

Table 1  
Sample Scenario for the Attention Condition

Time (minutes: seconds)	Scripted "client" behavior	
	Response class	Topography
0:16	SIB	Hit self
0:18	SIB	Hit self
0:30	SIB	Hit self
0:43	SIB	Hit self
0:56	SIB	Hit self
1:21	Disruption	Kick wall
1:50	Appropriate play	Put toy in therapist's hand
2:01	SIB	Hit self
2:12	SIB	Hit self
2:22	SIB	Hit self
2:33	SIB	Hit self
2:44	Social initiation	Ask "Can we play?"
2:58	SIB	Hit self
3:35	Disruption	Throw chair
4:02	SIB	Hit self
4:12	SIB	Hit self
4:23	SIB	Hit self
4:35	SIB	Hit self
4:45	Appropriate play	Tug therapist's sleeve with toy in hand
4:56	SIB	Hit self

directive to perform a task, delivered either with or without a supplemental prompt. These two behaviors generated a larger number of scoring categories because both could be initiated or terminated as either antecedent or consequent events with respect to client behavior. Therapist behaviors were scored as either correct or incorrect based on their occurrence, nonoccurrence, or termination relative to either a prescribed temporal sequence or the occurrence (or nonoccurrence) of client behavior. For example, the delivery of an antecedent event (e.g., noncontingent attention during the play condition or instructions during the demand condition) was scored as correct if it occurred at the appropriate time or as incorrect if it did not occur. The delivery of consequences (e.g., contingent attention during the attention condition or termination of a trial during the demand condition) was scored as correct if it followed a designated

client behavior within 5 s or as incorrect if it did not occur following a target client behavior. Finally, the nondelivery of consequences (e.g., the absence of attention for appropriate behavior during the attention condition) was scored as correct if it did not occur or as incorrect if it did occur.

#### *Response Measurement and Reliability*

All sessions lasted for 5 min and were videotaped and scored later by graduate students, who recorded occurrences of therapist and client behaviors using a 10-s partial-interval recording procedure. Client behaviors were scored during all sessions, and comparisons of these data with sequences specified in the scripts provided a measure of procedural fidelity; these comparisons always exceeded 90% accuracy. A second observer scored 26% of the videotapes to collect independent data on the occurrence of therapist behaviors. Observers' records were compared on an interval-by-interval basis, and percentage agreement scores were calculated by dividing the number of scoring agreements (for the occurrence or nonoccurrence of a behavior) by the number of agreements plus disagreements, and multiplying by 100%. The mean agreement score for therapist behaviors was 93.9% (range, 86.0% to 100%).

#### *Baseline*

Although exposure to any training during baseline would preclude the assessment of naive performance, we presumed that such performance would be uninformative from a practical standpoint because it is unlikely that anyone would conduct a functional analysis with no information whatsoever. Thus, the baseline was constructed to approximate a situation in which a therapist who was attempting to conduct a functional analysis had access to published material but received no formal instruction, assistance, or feedback.

Participants were given the method section of the Iwata et al. (1982/1994) article and were asked to read it several days prior to initiating the collection of baseline data (the exact number of days varied from 1 to 5 because of scheduling differences). On the first day of baseline, participants were given an additional 30 min to study the materials, after which they were asked to serve as therapists while conducting functional analysis sessions (attention, demand, and play conditions) with graduate students playing the roles of clients. Prior to each baseline session, participants were told which type of assessment condition they were to conduct but were given no further instructions. Participants received no feedback on their performance following baseline sessions.

#### *Training*

Training was conducted by one or more graduate students in two phases. The first phase was conducted in a group format in a university classroom. Participants were first given written descriptions and outlines of the assessment conditions to read. The descriptions were brief summaries based on the Iwata et al. (1982/1994) article that highlighted salient components: the purpose of a condition, target behaviors, and how to conduct a session. Descriptions used for each condition are contained in Appendix A, and their corresponding outlines are contained in Appendix B. A graduate student then reviewed the key components of each condition and showed a videotaped simulation of each condition, in which one graduate student played the role of therapist while another played the role of client. Following this exercise, participants took a 20-item written quiz containing simple factual questions about the assessment process (a sample quiz can be found in Appendix C). If a participant scored below 90% correct on the quiz, a graduate student reviewed the quiz answers with the participant, showed the videotape



again, and administered another quiz. This phase of training was complete when all participants scored 90% correct or higher on a quiz. All participants achieved a passing score on either their first or second quiz, and all training activities in this phase were completed in approximately 1.5 hr.

Following the classroom training, participants again conducted functional analysis sessions as in baseline, with two exceptions. These two changes from baseline procedures represented the second phase of training, which was conducted at the day program. First, participants were allowed to bring the outline into a session, which they could use as a cue. Second, they were given feedback on their performance by a graduate student immediately following each set of three sessions (one session of each condition). If a participant scored less than 95% correct responses during a session, the graduate student replayed the videotape of that session while pointing out both correct and incorrect aspects of the participant's performance. This sequence continued until a participant completed two consecutive sessions of each of the three conditions (excluding the first posttraining session of each condition) at or above 95% accuracy. The total duration of training in this second phase (including feedback and repeat viewing of videotapes but excluding actual session time) varied across participants from 10 min to 30 min.

### *Experimental Design*

Participants conducted simulated functional analysis sessions, as described above, in a fixed repeating sequence (attention, play, demand). The effects of training were evaluated in a multiple baseline across subjects design. Five participants conducted three sessions (one set of functional analysis conditions) under baseline conditions prior to receiving training; the remaining 6 participants conducted six sessions (two sets of

functional analysis conditions) prior to receiving training.

## RESULTS

Figure 1 shows participants' performance during the simulated functional analysis sessions, expressed as the percentage of correct therapist responses. Baseline performances were generally high ( $M = 69.9\%$ ; range of individual means, 50.0% to 89.5%), although the data reflect a great deal of variability. In addition, the performances of several participants, especially Carrie, Cindee, and Ricki, showed noticeable upward trends during baseline. All participants improved following training ( $M = 97.5\%$ ; range of individual means, 92.1% to 100%) and completed the study after conducting the minimum number of posttraining sessions. A comparison of individual performances across conditions showed that none of their baseline means exceeded 90%, whereas all of their posttraining means exceeded 95%, with the exception Karen, whose posttraining mean was 92.1% because of one low score (her first demand condition following training). Across all participants, 33 of the 51 baseline scores were below 80%; by contrast, 69 of the 99 posttraining scores were 100%.

## DISCUSSION

It has been suggested that the skills required to conduct functional analyses of behavior disorders exceed those of staff who are typically responsible for performing assessments and, furthermore, that the training necessary to develop such skills may be excessive. We examined these issues in the present study by observing the performance of undergraduate students playing the roles of therapists while conducting simulated functional analyses with graduate students playing the roles of clients who exhibited

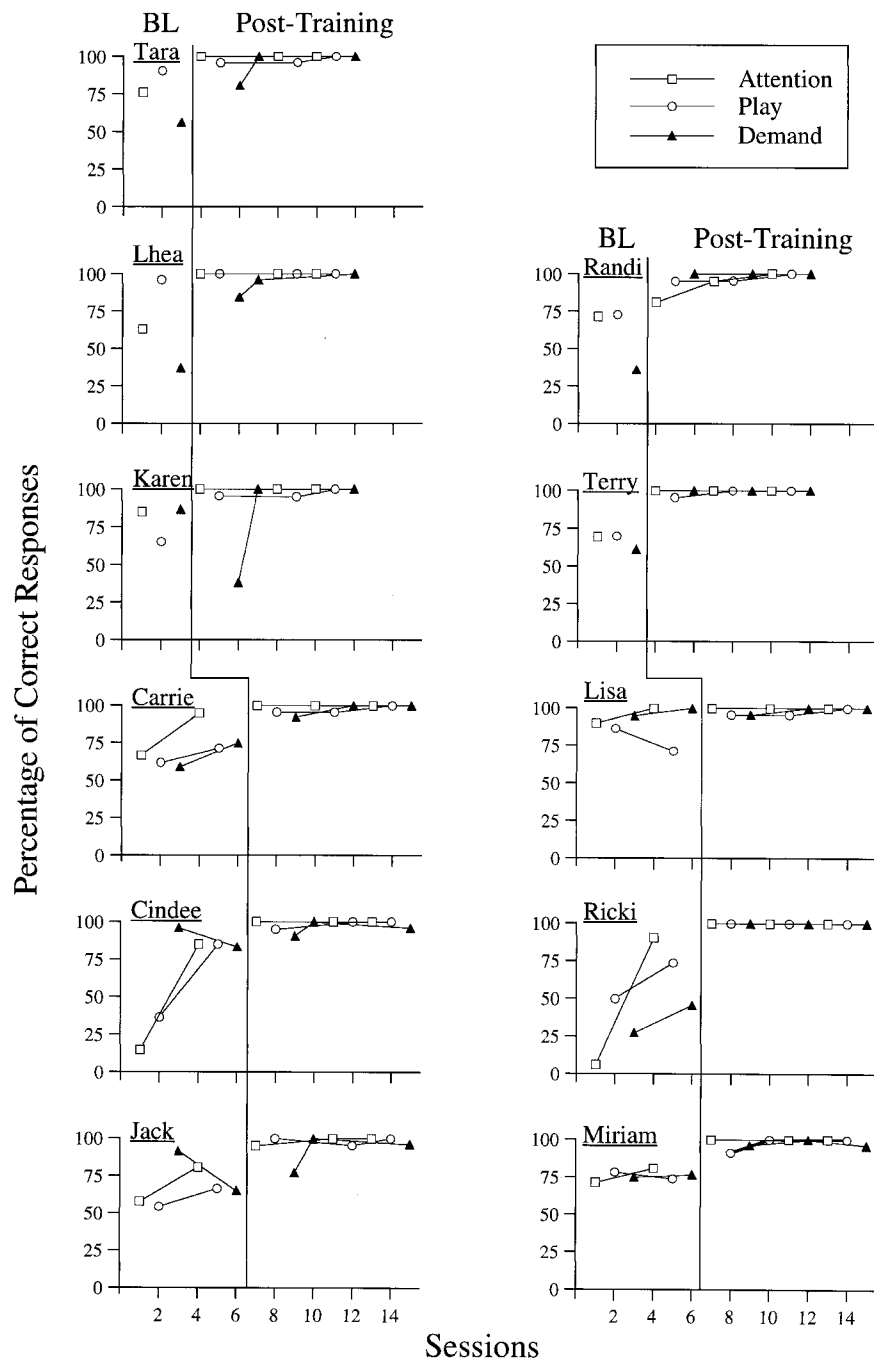


Figure 1. Percentage of correct therapist responses during simulated functional analysis sessions across baseline and posttraining conditions.

problem behaviors. After reading excerpts of previously published research describing one method for conducting a functional analysis, participants averaged about 70% correct re-

sponses during baseline sessions. Subsequently, all participants achieved a 95% accuracy criterion after receiving about 2 hr of training, which consisted of reading addi-

tional materials, watching a videotape, passing a quiz, and receiving feedback on their performance. These results suggest that staff with academic preparation equivalent to that of a BA degree can quickly acquire a basic set of skills for conducting functional analyses.

The fact that our participants exhibited a high percentage of correct responses during baseline deserves further comment. First, because their baseline performance was not completely naive, it was probably much higher than that of individuals who would attempt to conduct a functional analysis with absolutely no prior instruction. As noted earlier, however, we felt that truly naive performances would provide highly unrepresentative samples of behavior likely to be exhibited by staff who actually attempt to conduct functional analyses. Second, the amount of information participants received prior to conducting baseline sessions was limited to brief exposure to a single source (Iwata *et al.*, 1982/1994). We selected the source because it is frequently cited in the literature and because it serves as the basis for functional analyses conducted in our program. In reality, it is likely that staff who attempt to initiate assessments based on functional analysis methodology would do so only after having read more extensively. In spite of this limited exposure, participants performed rather well during the baseline sessions. Third, the performance of several participants showed increasing trends during baseline. We predicted (somewhat inaccurately) that participants' baseline performance would be uniformly poor and would not improve; therefore, we arbitrarily set the baseline lengths at the beginning of the study. It would have been preferable to continue taking baseline data until trends stabilized, but this was not possible from a practical standpoint. Because the participants' laboratory responsibilities included observing and, in some cases, conducting

functional analyses, we postponed these activities as long as possible at the beginning of the term to insure that sources of information (e.g., additional readings, extended observation of sessions) other than those described as training in this study would not influence the data. Nevertheless, the baseline trends represent a weakness in the study and raise the possibility that some participants eventually may have achieved the posttraining performance criterion with no additional instruction. All of these factors suggest that participants did reasonably well in their initial attempts to conduct sessions with minimal exposure to information (access to reading material) and that they may have improved further with practice.

The training procedures used in this study were neither novel nor complex. All of the instructional components, including written materials, video simulations, quizzes, and performance feedback, are common features of many staff training curricula (Reid, Parsons, & Green, 1989) and, with the exception of the quizzes, bear close resemblance to training programs implemented with paraprofessional staff such as direct-care service providers (e.g., Ducharme & Feldman, 1992) and respite-care workers (e.g., Neef, Trachtenberg, Loeb, & Sterner, 1991). In addition, graduate students prepared all of the training materials used in this study and conducted all of the training sessions. Thus, the level and extent of training provided in this study were probably representative of those available in many service settings that employ behavior analysts with advanced degrees.

Although the participants in this study acquired a very high degree of proficiency in conducting functional analysis sessions, the findings are limited in two significant respects. First, all performance was assessed under simulated conditions. Although results from several studies suggest that staff training conducted under simulated condi-



tions generalizes to clinical situations (e.g., Ducharme & Feldman, 1992; Jones & Eimers, 1975; Neef et al., 1991), the extent to which our participants could adequately conduct functional analyses with actual clients immediately following training is unknown. We did not attempt to measure performance under actual clinical conditions for two reasons. First, unlike other research on staff training, in which participants (trainees) were actual service providers or in which interventions involved teaching adaptive behavior to clients, the participants in this study had virtually no prior experience working with any clinical population, and the actual clients all exhibited behavior problems (i.e., SIB or aggression) that placed either them or therapists at risk. Therefore, the use of performance probes with actual clients immediately after training was deemed unacceptable. Second, although a number of participants eventually did conduct functional analysis sessions during the course of their laboratory work, several intervening educational experiences (e.g., reading a series of related articles, collecting primary and reliability data from assessment and treatment sessions, conducting preference assessments with clients) had transpired since the completion of training provided in this study, making it difficult to identify the necessary components required to produce competence under clinical conditions. As an extension of the work described in this study, however, each of the authors has participated in the training of therapists (including paraprofessional staff) in residential or school programs for persons with developmental disabilities. The instructional program has usually been conducted in a group context and has included the textual, role-play, videotape, and performance feedback components used in the present study, with an additional component consisting of demonstration and practice with actual clients. Using these procedures, we have found that

it is possible to establish levels of competence that are comparable to those reported here in less than half a day. The consultative nature of this work precluded an experimental arrangement, so the collection of controlled data in clinical contexts should be considered an important area for future work.

The second limitation in the present study was that training focused on a circumscribed set of skills. It is important to note that the implementation of functional analysis methodology under actual clinical conditions may require professional judgments related to data interpretation, modification of assessment conditions to identify idiosyncratic maintaining variables, risk management, and so forth. Although these additional skills were not examined in the present study, to the extent that they can be described objectively, it is likely that they could be taught in component fashion using methods similar to those employed here (e.g., see the recent work of Hagopian et al., 1997, on interpretation of functional analysis outcomes). Of course, the full benefit of adopting functional analysis methodology is realized when it is placed within the context of a program that integrates empirical approaches to individual assessment with advanced therapeutic technology, and an analysis of the skills required to develop such a program extends far beyond the scope of any single study.

Given these limitations, the present results are nevertheless encouraging in light of recent suggestions that functional analysis methodology is too complicated for use under typical clinical conditions. Most service settings to which clients with severe behavior disorders are referred employ one or more therapists with graduate training that includes course work in behavior analysis. The procedures and data presented here suggest that these therapists should be sufficiently skilled to train both themselves and others

to implement a number of the experimental approaches to behavioral assessment that comprise functional analysis methodology.

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## APPENDIX A

### PROCEDURAL DESCRIPTIONS OF ASSESSMENT CONDITIONS

#### *Attention Condition* *Purpose*

This condition is designed to determine whether the target behavior is maintained by contingent attention delivered by a therapist. The condition involves remaining in a room with a client and ignoring all client behavior, except for the target behavior, which is followed by attention.

*Target Behavior*

The target behavior being assessed consists of self-hitting, defined as one body part (arm, hand, etc.) striking against another body part.

*How to Conduct a Session*

1. Begin a session by directing the client toward the leisure materials that are present in the room. Tell the client that he or she should play with the toys while you do some work.

2. After issuing the initial instruction, move away from the client, sit in another chair, read or do some paperwork (or pretend to do so), and completely ignore all behaviors exhibited by the client except as noted below.

3. If the target behavior does not occur during the session, you will ignore the client for the entire session. Someone will inform you when the session is over.

4. If any behaviors other than the target behavior occur, ignore these also. Examples include appropriate behaviors (e.g., playing with the toys, smiling at you, or any attempts to talk to you or to interact with you in an appropriate manner) and inappropriate behaviors other than self-hitting (e.g., screaming, throwing materials, running around the room, aggression, etc.).

5. The only time you will attend to the client is when he or she engages in self-hitting. If the client exhibits the target behavior of self-hitting at any time during the session, do the following: (a) Go over to the client and verbally express concern and disapproval. For example, you could say something like, "Stop that, you're going to hurt yourself," "[Name], you shouldn't hit yourself; play with your toys," "[Name], I don't want you to do that; you're going to get hurt," or something similar. (b) While you express concern, briefly touch the client's arm, place your hand on the client's shoulder, or phys-

ically block the hitting response, but do not physically restrain the client. The general idea is to express concern, briefly interrupt the behavior, and calm the client. Do not shout at the client and do not handle the client roughly.

6. After a target behavior occurs and you have responded as indicated above (Step 5), resume ignoring the client until another target behavior occurs or until the session is over.

*Demand (Escape) Condition**Purpose*

This condition is designed to determine whether the target behavior is maintained by escape from task demands. The condition involves presenting a series of instructional trials to a client. Compliance produces praise, noncompliance produces a series of prompts, and occurrence of the target behavior immediately terminates the trial.

*Target Behavior*

The target behavior being assessed consists of self-hitting, defined as one body part (arm, hand, etc.) striking against another body part.

*How to Conduct a Session*

1. Begin a session with you and the client seated at a table. Using the materials that are available, you will implement a series of trials to teach the client to perform a task. The task selected for this simulation is putting blocks in a bucket.

2. Activate a stopwatch at the beginning of the session. At the beginning of every 30-s interval (starting at 0), you will initiate an instructional trial. Thus, there will be approximately 10 trials during a 5-min session. Begin each training trial with the bucket and a block on the table in front of the client. The sequence to be used during each trial is as follows: (a) First deliver a clear instruction to the client, such as "[Name], put the block

in the bucket.” If the client performs the response within 5 s (count to 5 slowly to determine this), or at least begins to initiate the response during that time, deliver praise (e.g., say “nice job,” “that’s great,” “good,” etc.) when the client has finished. (b) If the client does not perform the response within 5 s, repeat the instruction and simultaneously demonstrate the response (i.e., you put a block in the bucket). If, following this demonstration, the client performs the response in 5 s, deliver praise as noted above. (c) If the client does not perform the response within 5 s of your demonstration, repeat the instruction again and simultaneously provide physical assistance. That is, use your hands to help the client pick up the block and put it in the bucket. Do not deliver praise if you used physical assistance. (d) If, at any time during this sequence, the client emits the target behavior (self-hitting), immediately terminate the trial. Remove the materials from the table, turn away from the client, and ignore the client until it is time to begin a new trial. (e) If the client emits other inappropriate behaviors (screaming, throwing things, aggression, etc.), continue with the sequence; do not terminate the trial when these responses occur.

3. Repeat the above sequence after 30 s have elapsed since the trial began, and continue until the session is over.

### *Play Condition*

#### *Purpose*

This is designed to be a general control condition, in which no demands are placed on the client, continuous access to leisure materials is available, and attention is delivered frequently independent of the client’s behavior.

#### *Target Behavior*

The target behavior being assessed consists of self-hitting, defined as one body part

(arm, hand, etc.) striking against another body part.

### *How to Conduct a Session*

1. Begin a session by activating a stopwatch and directing the client toward the leisure materials that are present in the room. You may say something like, “Here are some nice toys; why don’t you play with them for a while?” or “Would you like to play with these toys?” (as you hand one to the client), or anything similar.

2. At least once every 30 s, deliver some form of attention to the client. For example, you can tell the client that he or she is playing nicely, ask if he or she is having fun, and so forth. You can also hand the client another toy, pat the client briefly on the shoulder, or smile at the client. The general idea is to provide some type of friendly, non-demanding interaction (lasting about 5 s) at 30-s intervals.

3. If the client attempts to interact with you appropriately (e.g., asks for something, hands you a toy, etc.), reciprocate.

4. If the client emits any form of inappropriate behavior, including the target behavior, do not deliver attention.

5. If the target behavior occurs precisely at the end of a 30-s interval (just as you are about to deliver attention), do not deliver attention. Instead, wait until the behavior has stopped for 5 s, then deliver attention.

## APPENDIX B

### OUTLINE OF ASSESSMENT CONDITIONS

#### *Attention Condition*

1. Instruct client to play with toys; then ignore.

2. Client emits appropriate behavior: Ignore.

3. Client emits inappropriate behavior other than the target: Ignore.

4. Client emits target behavior (hits self):

Express concern paired with brief physical contact.

### *Demand (Escape) Condition*

1. Activate stop watch and begin trials.
2. First instruction (prompt): Instruct client to put block in bucket.
  - (a) Client complies: Deliver praise.
  - (b) Client emits target behavior (hits self): Withdraw materials and turn away until next trial.
  - (c) Client emits any other behavior: Continue sequence.
  - (d) Client emits no response: Go to second prompt.
3. Second prompt: Repeat instruction and demonstrate.
  - (a) Client complies: Deliver praise.
  - (b) Client emits target behavior (hits self): Withdraw materials and turn away until next trial.
  - (c) Client emits any other behavior: Continue sequence.
  - (d) Client emits no response: Go to third prompt.
4. Third prompt: Repeat instruction and physically guide.
  - (a) Do not deliver praise.
  - (b) Client emits target behavior (hits self): Withdraw materials and turn away until next trial.
  - (c) Client emits any other behavior: Continue sequence.
5. Begin a new trial when the 30-s interval has ended.

### *Play Condition*

1. Activate stopwatch and direct client toward toys.
2. Deliver attention at least once every 30 s.
3. Client initiates appropriate social interaction with therapist: Deliver attention.
4. Client emits any inappropriate behavior: Do not deliver attention.
5. Client emits inappropriate behavior

just as you are about to deliver attention: Wait until the behavior has stopped for 5 s.

## APPENDIX C

### SAMPLE QUIZ

1. Which assessment condition (attention, demand, alone, play) is considered the control condition for the other three conditions?
2. In which assessment condition or conditions does the client have access to leisure items?
3. During all conditions, what should you do if the client engages in a disruptive or aggressive behavior (e.g., tips over a table or tries to kick the therapist) that is not a target behavior during the functional analysis?
4. What should you do if a client becomes injured during a session?
5. How do you begin an attention session (what do you say and do)?
6. When do you deliver attention to the client during the attention condition?
7. Give two examples of what you might say or do when delivering attention during the attention condition.
8. What should you do if the client asks a question or requests help during the attention condition?
9. How often do you deliver attention to the client during the play condition?
10. Give two examples of what you might say or do when delivering attention during the play condition.
11. What should you do if the client engages in the target behavior (SIB) during the play condition just as you are about to deliver attention?
12. What should you do if the client asks you a question during the play condition when you are not scheduled to deliver attention?
13. What should you do if the client engages in disruptive behavior (e.g., knocks over furniture, throws objects, etc.) that is not a target behavior during the play condition?



14. How often should you initiate training trials during the demand condition?
15. If the task during the demand condition is putting a puzzle piece into a puzzle, what should you say when initiating a trial?
16. If, during the demand condition, the client does not respond to your first prompt within 5 s, what should you do?
17. If, during the demand condition, the client does not respond to your second prompt within 5 s, what should you do?
18. What should you do if the client engages in the target behavior (SIB) while you are trying to get the client to work on a puzzle during the demand condition?
19. Should you praise the client during the demand condition if you had to physically guide the client to complete the task?
20. What should you do if the client asks for help completing the assigned task during the demand condition?

### STUDY QUESTIONS

1. What are the three general methods used for conducting functional assessments? Which method is considered superior, and what is its main advantage?
2. What are the most commonly cited limitations of functional analysis methodology, and which of these was addressed in the current study?
3. What were the authors' rationales for their selection of therapists and clients, and for the procedure they used to assess therapist performance?
4. The behaviors of primary interest were those of the therapist. What target responses were scored, and what criteria were used to determine whether these responses were correct or incorrect?
5. Briefly describe the baseline procedures. Why was performance not assessed under completely naive conditions?
6. What were the major components of the training program, and what was the total duration of training?
7. Describe the participants' performance in baseline and posttraining. What aspect of the data may have diminished the demonstration of experimental control? In discussing this limitation, what did the authors suggest about the likelihood that participants might have achieved high performance levels without any training?
8. What additional skills (not addressed in this study) may be important to the successful implementation of functional analyses?

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